

# Flexible Foxtrails



*Enhancing Foxpro applications using Adobe  
Flex and the Foxtrails framework*

# Intro

- ✿ *Why bother?*
- ✿ *Foxpro is great at manipulating data*
- ✿ *But the interface is a bit dated*
- ✿ *We can make it better*

# Adobe Flex

- ✿ *Adobe Flex is essentially a programmer-oriented version of Flash. It's relatively easy for programmers to get started creating compelling graphical interfaces*
- ✿ *But it's not so great at manipulating data*
- ✿ *In fact, it exists inside a security sandbox and cannot access databases or the filesystem directly.*

# Foxpro & Flex

- ✿ *Allows creation of a compelling modern UI with Foxpro's ease of database access*

# Foxtrails

- ✿ *Used as the glue between Foxpro and Flex.*
- ✿ *Essentially, it's a web page running inside of Foxpro that relies on services provided by Fox trails to allow interaction between the two applications.*
- ✿ *Foxtrails web site runs on local network, servicing requests from Flex for data and sending updates back to Foxpro*



# Sample Sites

- ✿ *Quotepro Agent Dashboard: <https://www.quotepro.com/swf/agentdashboard.html?agentcode=888880>*
- ✿ *Constitutional Payment Lookup <http://www.constitutional.com>*

# Building our Demo App

- ✿ *Interface first: A small flex application that displays a grid of customers*
- ✿ *Next we'll design a foxtrails data feed for the grid*
- ✿ *Finally we'll add the flex application to a foxpro form and demonstrate how to communicate user actions back to Foxpro using browser events.*

# About Data Formats

- ✿ *SOAP and XML are horribly redundant data formats*
- ✿ *see <http://www.jamesward.com/census/> for benchmarks of alternative data transfer protocols*
- ✿ *For our demo application we'll use the JSON data format, it's roughly half the size of an equivalent XML data stream.*



# A few JSON examples

✿ *`var person = { name: "John Doe", age: 43, weight: 180 }`*

✿ *`var fruits = [ { name: "Apple", price: 1.99 },  
{ name: "Orange", price: 1.50 } ];`*

✿ *`var order = { customer: person, items: fruits };`*

# Flex Interface

addres...	city	comp...	conta...	conta...	country	custo...	fax	phone	posta...	region
67, avenue	Versailles	La corné d'	Daniel Toni	Sales Repn	France	LACOR	30.59.85.1	30.59.84.1	78000	
1 rue Alsac	Toulouse	La maison	Annette Ro	Sales Mana	France	LAMAI	61.77.61.1	61.77.61.1	31000	
1900 Oak t	Vancouver	Laughing B	Yoshi Tann	Marketing /	Canada	LAUGB	(604) 555-	(604) 555-	V3F 2K1	BC
12 Orchest	Walla Walli	Lazy K Kou	John Steel	Marketing /	USA	LAZYK	(509) 555-	(509) 555-	99362	WA
Magazine	Frankfurt a	Lehmanns	Renate Mei	Sales Repn	Germany	LEHMS	069-02458	069-02459	60528	
87 Polk St.	San Francis	Let's Stop f	Jaime Yomi	Owner	USA	LETSS	(415) 555-	(415) 555-	94117	CA
Camera 52	Barquisime	LILA-Super	Carlos Gon	Accounting	Venezuela	LILAS	(9) 331-72	(9) 331-69	3508	Lara
Ave. 5 de M	l. de Margi	LIND-Delici	Felipe Izqu	Owner	Venezuela	LINDO	(8) 34-93-f	(8) 34-56-	4980	Nueva Espa
89 Chiaros	Portland	Lonesome	Fran Wilson	Sales Mana	USA	LONMP	(503) 555-	(503) 555-	97219	OR
Via Ludovic	Bergamo	Magazzini /	Giovanni R	Marketing /	Italy	MAGAA	035-64023	035-64023	24100	
Rue Joseph	Bruxelles	Maison Dev	Catherine C	Sales Agen	Belgium	MAISO	(02) 201 2-	(02) 201 2-	B-1180	
1009 Pine f	Niles	Marquis Enl	Brian Marq	Owner		ME	574-339-9-	49120		MI
Heenstr. 22	Leipzig	Morgenster	Alexander I	Marketing /	Germany	MORGK	0342-0231	04179		
South Hous	London	North/South	Simon Crov	Sales Assor	UK	NORTS	(171) 555-	(171) 555-	SW7 1RZ	
Ing. Gusta	Buenos Ais	Océano Atl	Yvonne Mo	Sales Agen	Argentina	OCEAN	(1) 135-55	(1) 135-53	1010	
2743 Berli	Anchorage	Old World I	Rene Philli	Sales Repn	USA	OLDWO	(907) 555-	(907) 555-	99508	AK
Mehrheime	Köln	Ottlies Kas	Henriette P	Owner	Germany	OTTIK	0221-0765	0221-0644	50739	
265, boule	Paris	Paris spédis	Marie Bertr	Owner	France	PARIS	(1) 42.34.2	(1) 42.34.2	75012	
Calle Dr. Jo	México D.F.	Perides Co	Guillermo F	Sales Repn	Mexico	PERIC	(5) 545-37	(5) 552-37	05033	
Gelsihweg 1-	Salzburg	Piccolo und	Georg Pipp	Sales Mana	Austria	PICCO	6562-9723	6562-9722	5020	
Estrada da	Lisboa	Princesa Is	Isabel de C	Sales Repn	Portugal	PRINI	(1) 356-56	1756		
Rua da Par	Rio de Jani	Que Delida	Bernardo B	Accounting	Brazil	QUEDE	(21) 555-4	(21) 555-4	02389-67	RJ
Alameda di	São Paulo	Queen Coz	Lúcia Carvl	Marketing /	Brazil	QUEEN	(11) 555-1	05487-02		SP

# Flex components

- ✿ *HttpService* -- used to retrieve the data from Foxtrails
- ✿ *ArrayCollection* -- stores the customer data for use in the grid
- ✿ *AdvancedDataGrid* -- supports sorting by multiple columns, grouping and summarizing data.
- ✿ *BrowserManager* -- used to send notifications to Foxpro

# Foxtrails

- ✿ *Using our existing customer controller, we'll add a new method that returns a list of customers formatted using JSON instead of the existing html list.*
- ✿ *Procedure `JSONList`.*
- ✿ *`JSONList.vml` -- scans the customer table, creating a json object for each row of data.*

# JSONList.vml

```
[
  <% SELECT Customers
    lcRowDelim = ""
    SCAN
  %>
  <<lcRowDelim>>
  {
    <%
      lcFieldDelim = ""
      FOR i = 1 to FCOUNT() %>
        <<lcFieldDelim>><<jsonfor(lower(field(i)))>>
      <% lcFieldDelim = ","
      ENDFOR %>
    %>
    lcRowDelim = ","
  ENDSCAN
  %>
]
```



# Foxpro Application

- ✿ *We'll add a Microsoft Browser Control to our application, then add event handlers for the BeforeNavigate event.*
- ✿ *In the control's init method, we open the Flex Application.*
- ✿ *Lastly, we add an event handler to listen for click events within the grid*

# Summary

- ✿ *Flex Applications paired with Foxpro data provide an enhanced user experience while leveraging the core strengths of Foxpro.*